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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/616,020	07/13/2000	Urs Duerig	CH9-1999-0025-US1	3940
7590	10/23/2003		EXAMINER	
Anne Vachon Dougherty 3173 Cedar Road Yorktown Heights, NY 10598			SUMMONS, BARBARA	
			ART UNIT	PAPER NUMBER

2817

DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/616,020

Applicant(s)

DUERIG ET AL. *CH*

Examiner

Barbara Summons

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,6-10,14-18,20 and 25-27 is/are rejected.
- 7) ☐ Claim(s) 2,3,5,11-13,19 and 21-24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Claims 1, 7, 10, 20, and 25 are objected to because of the following informalities:

In claim 1, on line 8 thereof, for clarity the "N" should be identified in the claim at the first occurrence thereof by inserting thereafter one of - - (i.e. natural numbers) - - or - - (i.e. positive integers) - - or - - (i.e. 1, 2, ...) - - [see e.g. the specification at page 10, the last line thereof].

In claim 7, on line 3, "multiplication," should be followed by - - and - -.

In claim 10, on line 1, it appears that "1" should correctly be - - 9 - - since it is claim 9 that provides antecedent basis for "the back end system".

In claim 20, note that "algorithms" and "sets", on lines 1 and 2, respectively, should be changed to their singular forms.

In claim 25, on line 7 thereof, "N" should be identified as discussed in reference to claim 1 above.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4, 6-10, 14-18, 20, and 25-27 are rejected under 35 U.S.C. § 102(b) as being anticipated by van den Honert U.S. 4,823,795.

Regarding claims 1, 4 and 25, Fig. 8 of van den Honert discloses a signal processing system 10 and a corresponding method for processing an input signal, comprising: a plurality of resonators 88A-88I being a "dynamic filter array" (i.e. operating all of the time on continuous input), each resonator inherently having parameters characterizing it for processing the input signal to generate N individual output signals (in this instance  $N=9$ ); and a reconstructor (i.e. comprising the nonlinearities 90 and the summer 32) for weighting each of the N individual output signals, wherein the nonlinearities 90 weight the N individual outputs based on a time dependence, the weight being calculated as shown in Fig. 10, and because there are also nine nonlinearities 90A-90I, there are generated N individual weighted signals; and summer 32 superposes the N individual weighted signals to obtain  $M=1$  output signal.

Regarding claims 6-8, the reconstructor comprises circuitry for "dynamically calculating" (i.e. re-calculating) the weights (see col. 9, Ins. 36-40) for the N individual output signals, and the weighted output signals are superposed by addition by adder 32.

Regarding claims 9 and 10, the device is disclosed as for use as a hearing aid which inherently must have interface circuitry (see col. 9, Ins. 30-34).

Regarding claims 14-18 and 20, the resonators are realized by a processor and a coded algorithm (see col. 8, Ins. 13-24 and 50-55 and Fig. 10), the input is a voice into microphone 70 (e.g. especially in the case of a hearing aid), the single M output signal is a "descriptor" of the input signal (i.e. identifying the sound), and the "descriptor" recognizes speech (see e.g. col. 4, ln. 68 to col. 5, ln. 5) so is therefor, "usable" or "for use" in a speech recognition system such as a hearing aid (see col. 9, lines 30-34).

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Regarding claims 26 and 27, the signal processor 10 includes a computer program element and a computer program product comprising a computer readable medium being whatever the digital computer program code (col. 8, Ins. 13-25 etc.) is provided on to be loaded to the "computer" being the integrated circuit chip disclosed (col. 8, Ins. 50-55) to make the computer system execute the procedure.

4. Claims 1, 4, 7, 8, 17/1 and 25 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hauser et al. U.S. 5,736,909.

Regarding claims 1, 4 and 25, Fig. 2 of Hauser et al. discloses a signal processing system 210 and a corresponding method for processing an input signal, comprising: a plurality of filters/resonators 20 ( $F_1$ - $F_N$ , see col. 3, ln. 60), wherein a resonator is a filter by the broadest definition as admitted by Applicants (see e.g. the spec. at pg. 6, Ins. 4-7), the plurality of filters forming a dynamic filter array, with each resonator/filter having parameters characterizing it (e.g. the transfer function see col. 3, Ins. 50-54), for processing the input signal  $y(t)$  to generate  $N$  individual output signals  $U_1(t) - U_N(t)$ ; and a reconstructor for weighting each of the  $N$  individual output signals using a corresponding weight  $W_1$ - $W_N$  to generate  $N$  individual weighted signals 30; and for superposing the  $N$  individual weighted signals to obtain  $M=1$  output signal  $x(t)$ .

Regarding claims 7 and 8, the superposing of the  $N$  individual weighted signals is done by addition in adder 40. Regarding claim 17, the output signal  $x(t)$  is a "descriptor" of the input signal.

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***Allowable Subject Matter***

5. Claims 2, 3, 5, 11-13, 19, and 21-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Haronian et al. U.S. 5,856,722 discloses a microelectromechanical (MEMs) filter bank for use in a hearing aid or speech recognition system (see Figs. 2, 3, and 6, the abstract, and col. 3, Ins. 52-56).

Lagö et al. U.S. 6,243,671 discloses a speech recognition system (Fig. 2) that uses two filters 2 and 3, and weights and combines their outputs (see Fig. 3 box B).

Stevens U.S. 5,748,838 discloses a speech representation system (Fig. 4) with frequencies  $f_1$  -  $f_4$  indicating different non-nasal vowels (see col. 7, Table 1).

Binnig et al. WO 97/13127 was mentioned by Applicants in the specification.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara Summons whose telephone number is (703) 308-4947. The examiner can normally be reached on M-Th, M-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bob Pascal can be reached on (703) 308-4909. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

bs  
October 17, 2003



**BARBARA SUMMONS  
PRIMARY EXAMINER**